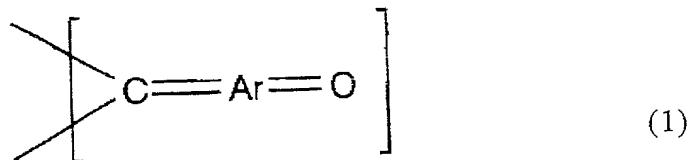


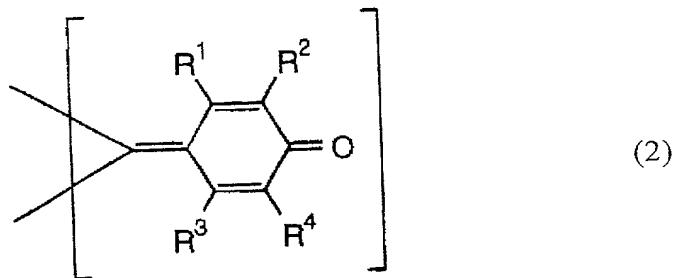
WHAT IS CLAIMED IS:

1. A battery comprising a positive electrode, a negative electrode and electrolyte, at least one of said positive and negative electrodes including an electrode layer essentially composed of cyclic conjugated carbonyl compound having a structural unit expressed by general formula (1)



where Ar is an organic group equivalent to a compound selected from the group consisting of aromatic compound having carbon number 5 to 14 from which two hydrogen atoms are eliminated and substituted compound of said aromatic compound from which two hydrogen atoms are eliminated.

2. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound has the structural unit expressed by general formula (2)



ПРЕДСТАВЛЕНИЕ

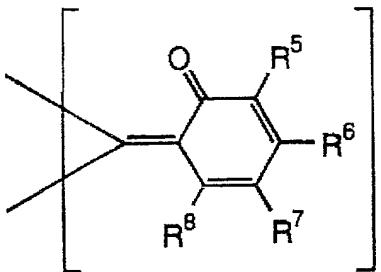
where substituents R¹ to R⁴ are independent of one another, each of the substituents R¹ to R⁴ is selected from the group consisting of hydrogen, halogen atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, substituted group of said alkenyl group, cycloalkyl group, substituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group.

3. The battery as set forth in claim 2, in which each of said substituents R¹ to R⁴ has at least one element selected from the group consisting of sulfur atom,

silicon atom, phosphorous atom and boron atom substituted for an atom thereof.

4. The battery as set forth in claim 2, in which said structural unit has two of said substituents R¹ to R⁴ adjacent to one another and forming a ring structure.

5. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound has the structural unit expressed by general formula (3)



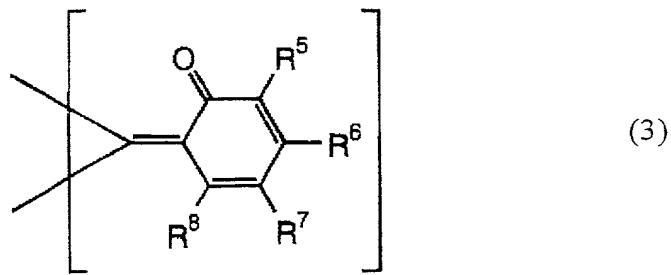
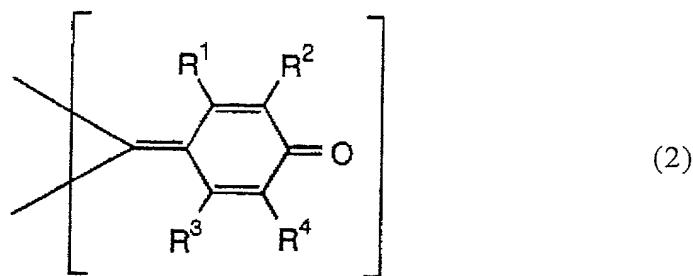
(3)

where substituents R^5 - R^8 are independent of one another, each of the substituents R^5 to R^8 is selected from the group consisting of hydrogen, halogen atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, substituted group of said alkenyl group, cycloalkyl group, substituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group.

6. The battery as set forth in claim 5, in which each of said substituents R^5 to R^8 has at least one element selected from the group consisting of sulfur atom, silicon atom, phosphorous atom and boron atom substituted for an atom thereof.

7. The battery as set forth in claim 5, in which said structural unit has two of said substituents R⁵ to R⁸ adjacent to one another and forming a ring structure.

8. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound has the structural unit expressed by general formula (2) and the structural unit expressed by general formula (3)



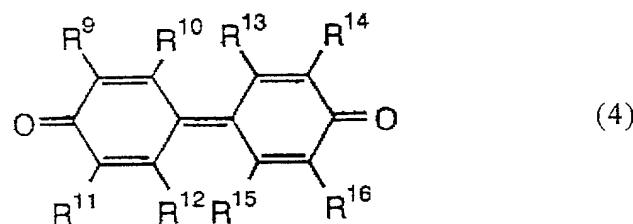
where substituents R¹ to R⁴ are independent of one another, each of the substituents R¹ to R⁴ is selected from the group consisting of hydrogen, halogen atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, sub-

stituted group of said alkenyl group, cycloalkyl group, substituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group, substituents R⁵ - R⁸ are independent of one another and substituents R⁵ to R⁸ are same as said substituents R¹ to R⁴.

9. The battery as set forth in claim 8, in which each of said substituents R¹ to R⁸ has at least one element selected from the group consisting of sulfur atom, silicon atom, phosphorous atom and boron atom substituted for an atom of thereof

10. The battery as set forth in claim 8, in which said structural unit has two of said substituents R¹ to R⁸ adjacent to one another and forming a ring structure.

11. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound is expressed by general formula (4)



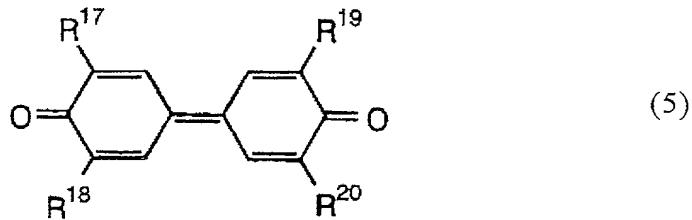
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where substituents R⁹ - R¹⁶ are independent of one another, each of the substituents R⁹ to R¹⁶ is selected from the group consisting of hydrogen, halogen atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, substituted group of said alkenyl group, cycloalkyl group, substituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group.

12. The battery as set forth in claim 11, in which said compound has at least one element selected from the group consisting of sulfur atom, silicon atom, phosphorous atom and boron atom substituted for an atom of each of said substituents R⁹ to R¹⁶.

13. The battery as set forth in claim 11, in which said compound has two of said substituents R⁹ to R¹⁶ adjacent to one another and forming a ring structure.

14. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound is expressed by general formula (5)

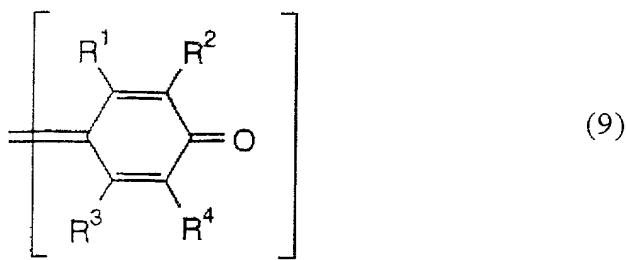


where substituents R^{17} - R^{20} are independent of one another, and each of the substituents R^{17} - R^{20} is alykyl group having carbon number 1 to 6.

15. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound is expressed by any one of general formulae (6) to (8):



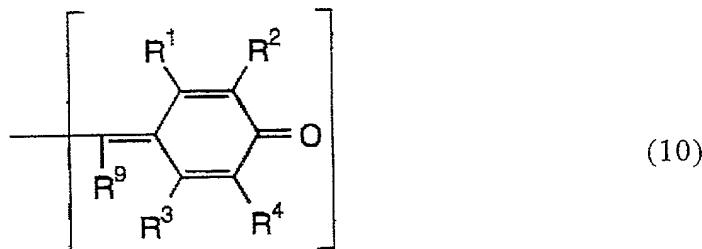
where X is an organic group equivalent to a compound selected from the group consisting of aromatic compound having carbon number 5 - 30 from which n hydrogen atoms are eliminated and substituted compound of said aromatic compound from which n hydrogen atoms are eliminated, V is the structural unit expressed by general formula (9), X is bonded to n structural units V independent of one another and n is an integer from 2 to 6



where substituents R¹ to R⁴ are independent of one another, each of the substituents R¹ to R⁴ is selected from the group consisting of hydrogen, halogen atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, substituted group of said alkenyl group, cycloalkyl group, substituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group;



where Y is an n-valent organic group equivalent to a compound selected from the group consisting of chain hydrocarbon compound having carbon number 1 to 5 from which n hydrogen atoms are eliminated, substituted compound of said chain hydrocarbon compound from which n hydrogen atoms are eliminated, cyclic hydrocarbon compound having carbon number 3 to 30 from which n hydrogen atoms are eliminated and substituted compound of said cyclic hydrocarbon compound from which n hydrogen atoms are eliminated and bivalent sulfur atom, Z is the structural unit expressed by general formula (10), said Y is bonded to the n structural units Z independent of one another, and n is an integer from 2 to 6

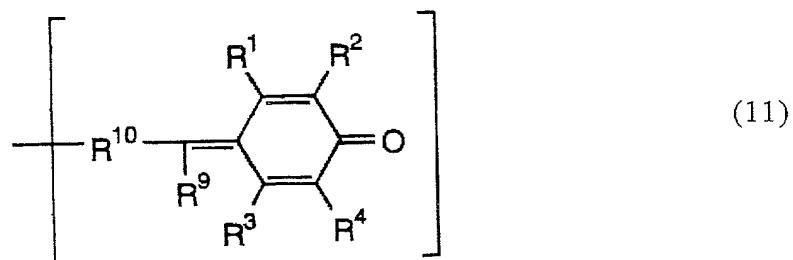


where R^1 to R^4 are same as those in said general formula (9) and substituent R^9 is a monovalent organic group selected from the group consisting of hydrogen, halogen atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, substituted group of said alkenyl group, cycloalkyl group, sub-

stituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group; and



where Y is same as that in said general formula (7), W is the structural unit expressed by general formula (11), Y is bonded to the n structural units W independent of one another and n is an integer from 2 to 6



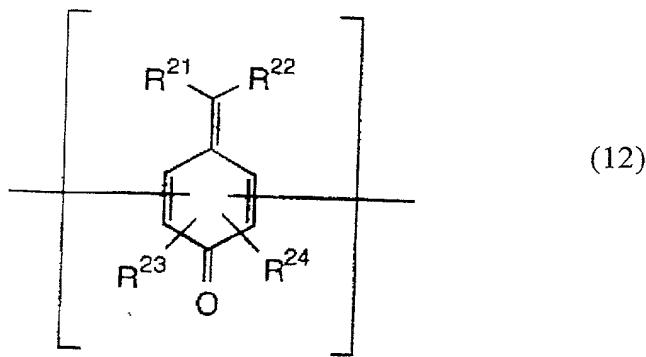
where R¹ to R⁴ and R⁹ are same as those in said general formula (10) and R¹⁰ is a bivalent organic group equivalent to a compound selected from the group consisting of aliphatic hydrocarbon compound from which two hydrogen atoms are eliminated, substituted compound of said aliphatic hydrocarbon compound from which two hydrogen atoms are eliminated, aromatic hydrocarbon compound from which two hydrogen atoms are eliminated, substituted compound of said aromatic hydrocarbon compound from which two hydrogen atoms are eliminated, amine compound from which two hydrogen atoms are eliminated, substituted compound of said amine compound from which two hydrogen atoms are eliminated, ether compound from which two hydrogen atoms are eliminated, substituted compound of said ether compound from which two hydrogen atoms are eliminated, ester compound from which two hydrogen atoms are eliminated, substituted compound of said ester compounds from which two hydrogen atoms are eliminated, ketone compound from which two hydrogen atoms are eliminated, substituted compound of said ketone compound from which two hydrogen atoms are eliminated, amido compound from which two hydrogen atoms are eliminated, substituted compound of said amido from which two hydrogen atoms are eliminated, certain compound having any one of the combinations of the functional groups contained in the substituted/ non-substituted aliphatic hydrocarbon compounds, the substituted/ non-substituted aromatic hydrocarbon compounds, said substituted/ non-substituted amine compound, said substituted/ non-substituted ether compound, said substituted/ non-substituted ester compound, said sub-

stituted/ non-substituted ketone compound and said substituted/ non-substituted amido compound and from which two hydrogen atoms are eliminated.

16. The battery as set forth in claim 15, in which said n-valent organic group has at least one element selected from the group consisting of oxygen atom, nitrogen atom, sulfur atom, silicon atom, phosphorous atom and boron atom and substituted for at least one carbon atom thereof.

17. The battery as set forth in claim 15, in which said bivalent organic group has at least one element selected from the group consisting of oxygen atom, nitrogen atom, sulfur atom, silicon atom, phosphorous atom or boron atom and substituted for at least one atom thereof.

18. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound is polymer compound containing the structural unit expressed by general formula (12)



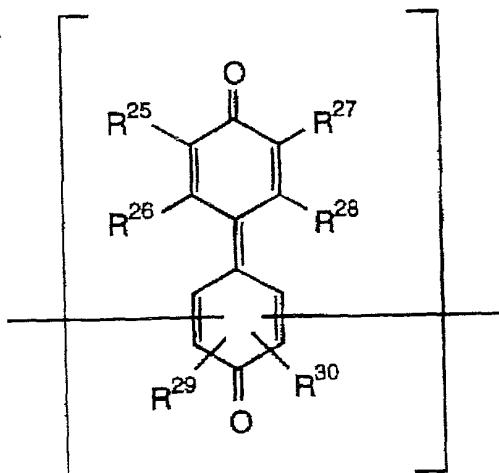
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where substituents R²¹ to R²⁴ are independent of one another, each of the substituents R²¹ to R²⁴ is selected from the group consisting of hydrogen, halogen atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, substituted group of said alkenyl group, cycloalkyl group, substituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group.

19. The battery as set forth in claim 18, in which each of said substituents R²¹ to R²⁴ has at least one element selected from the group consisting of sulfur atom, silicon atom, phosphorous atom and boron atom substituted for an atom thereof.

20. The battery as set forth in claim 18, in which said structural unit has two of said substituents R²¹ to R²⁴ adjacent to one another and forming a ring structure.

21. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound is polymer compound containing the structural unit expressed by general formula (13)



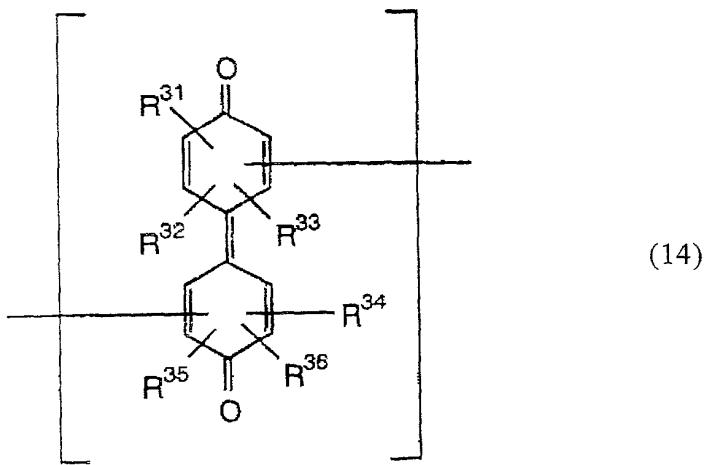
(13)

where substituents R²⁵ to R³⁰ are independent of one another, each of the substituents R²⁵ to R³⁰ is selected from the group consisting of hydrogen, halogen atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, substituted group of said alkenyl group, cycloalkyl group, substituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group.

22. The battery as set forth in claim 21, in which each of said substituents R²⁵ to R³⁰ has at least one element selected from the group consisting of sulfur atom, silicon atom, phosphorous atom and boron atom substituted for an atom thereof.

23. The battery as set forth in claim 21, in which said structural unit has two of said substituents R²⁵ to R³⁰ adjacent to one another and forming a ring structure.

24. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound is polymer compound containing the structural unit expressed by general formula (14)



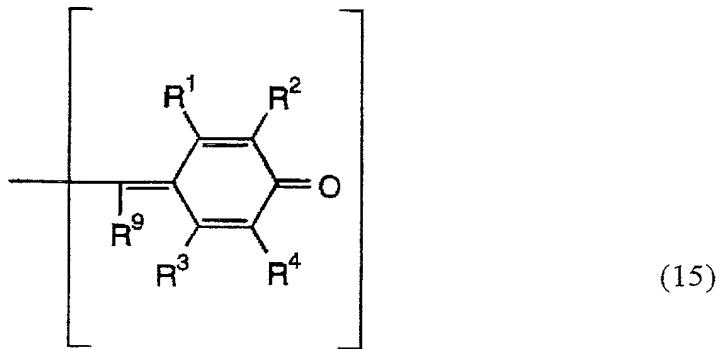
where substituents R³¹ to R³⁶ are independent of one another, each of the substituents R³¹ to R³⁶ is selected from the group consisting of hydrogen, halogen

atoms, hydroxyl group, nitro group, nitroso group, cyano group, carboxyl group, alkyl group, substituted group of said alkyl group, alkenyl group, substituted group of said alkenyl group, cycloalkyl group, substituted group of said cycloalkyl group, aryl group, substituted group of said aryl group, aralkyl group, substituted group of said aralkyl group, amino group, substituted group of said amino group, alkoxy group, substituted group of said alkoxy group, aryloxy group, substituted group of said aryloxy group, alkoxycarbonyl group, substituted group of said alkoxycarbonyl group, aryloxycarbonyl group, substituted group of said aryloxycarbonyl group, acyl group and substituted group of said acyl group.

25. The battery as set forth in claim 24, in which each of said substituents R³¹ to R³⁶ has at least one element selected from the group consisting of sulfur atom, silicon atom, phosphorous atom and boron atom substituted for an atom thereof.

26. The battery as set forth in claim 24, in which said structural unit has two of said substituents R³¹ to R³⁶ adjacent to one another and forming a ring structure.

27. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound is polymer containing the structural unit expressed by general formula (15)

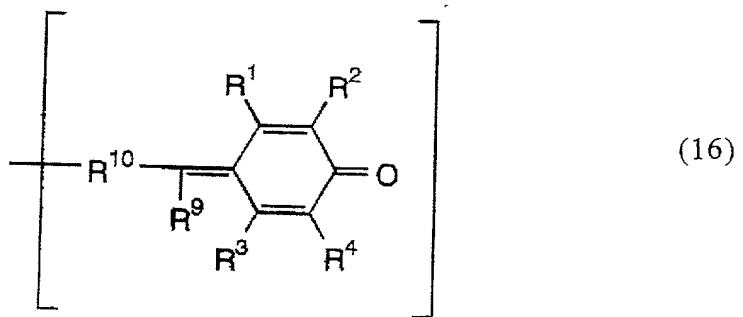


where R¹ to R⁴ and R⁹ are same as those in said general formula (10).

28. The battery as set forth in claim 27, in which each of said substituents R¹ to R⁴ and R⁹ has at least one element selected from the group consisting of sulfur atom, silicon atom, phosphorous atom and boron atom substituted for an atom thereof.

29. The battery as set forth in claim 27, in which said structural unit has two of said substituents R¹ to R⁴ and R⁹ adjacent to one another and forming a ring structure.

30. The battery as set forth in claim 1, in which said cyclic conjugated carbonyl compound is polymer containing the structural unit expressed by general formula (16)



where R¹ to R⁴, R⁹ and R¹⁰ are same as those in said general formula (11).

31. The battery as set forth in claim 30, in which each of said substituents R¹ to R⁴, R⁹ and R¹⁰ has at least one element selected from the group consisting of sulfur atom, silicon atom, phosphorous atom and boron atom substituted for an atom thereof.
32. The battery as set forth in claim 30, in which said structural unit has two of said substituents R¹ to R⁴, R⁹ and R¹⁰ adjacent to one another and forming a ring structure.
33. The battery as set forth in claim 1, in which said positive electrode contains said cyclic conjugated carbonyl compound.
34. The battery as set forth in claim 1, said battery serving as a lithium secondary battery.